

In the Specification:

Please amend the specification as shown:

Please delete the paragraph on page 1, lines 10-14, and replace it with the following paragraph:

This application is a continuation-in-part of U.S. Patent Application Serial No. 08/590,973 filed January 24, 1996 which in turn is a continuation-in-part of U.S. Patent Application Serial No. 08/446,149 filed May 22, 1995 which in turn is a continuation of U.S. Patent Application Serial No. 06/590,308 dated March 16, 1984.

Please delete the paragraph on page 1, lines 15-20, and replace it with the following paragraph:

Additionally, this application is a continuation-in-part of U.S. Patent Application Serial No. 08/446,148 filed May 22, 1995, which in turn is a continuation-in-part of U.S. Patent Application Serial No. 08/867,301 filed April 10, 1992 now U.S. Patent No. 5,417,986 issued May 23, 1995, which in turn is a continuation-in-part of U.S. Patent Application Serial No. 06/590,308 filed March 16, 1984.

Please delete the paragraph on page 40, lines 9-18, and replace it with the following paragraph:

Figure 24: .A. SDS_PAGE of intact CFA/I (lane 1), trypsin treated CFA/I (lane 2), and S. aureus V8 protease treated CFA/I. Molecular masses of individual bands were estimated from molecular weight standards (on left). Multiple lanes of both trypsin and V8 treated CFA/I were transferred to PVDF membranes where bands corresponding to the approximate molecular masses of 3500 (trypsin digest, see arrow lane 2) and 6000 (V8 digest, see arrow lane 3) were excised and subjected to Edman degradation. 24B. Resulting sequence of protein fragments (SEQ ID NOS 40 and 41) from each lane of A (position of sequenced portion of fragment in the intact protein. Underlined, italicized residues are amino acids under dispute in literature.

Please delete the paragraph on page 41, lines 1-3, and replace it with the following paragraph:

Figure 26. Complete sequence of CFA/I (SEQ ID NOS 42-44, respectively in order of appearance) (147 amino acids) with B cell recognition site (boxed areas) as defined by each individual monkey response (2Z2, 184D, and 34). Derived from data in Figure 25.

Please delete the paragraph on page 52, line 20, through page 53, line 2, and replace it with the following paragraph:

18. The composition of Item 13 having analogs of histatin with chain lengths of from 11-24 amino acids of molecular weights from 1,500-3,000 daltons and characterized by the following structures:

1. DSHAKRRHHGYKRRKFHEKHHSHRGY (SEQ ID NO: 1)
2. KRHHGYKRRKFHEKHHSHRGYR (SEQ ID NO: 2)
3. KRHHGYKRRKFHEKHHSHR (SEQ ID NO: 3)
4. RKFHEKHHSHRGYR (SEQ ID NO: 4)
5. AKRRHHGYKRRKFH (SEQ ID NO: 5)
6. *AKRRHHGYKRRKFH
7. KRHHGYKRRKF (SEQ ID NO: 6)

*D-amino acid

Please delete the paragraph on page 53, lines 3-7, and replace it with the following paragraph:

19. The composition of Item 10 wherein the biologically active agent is a polypeptide Leutinizing hormone releasing hormone (LHRH) that is a decapeptide of molecular weight 1182 in its acetate form, and having the structure:

p- E H W S Y G L R P G (SEQ ID NO: 7)

Please delete the paragraph on page 59, line 9, through page 60, line 21, and replace it with the following paragraph:

67. The vaccine according to Item 63 wherein the antigenic synthetic peptide is selected from the group consisting essentially of Synthetic Peptides Containing CFA/I Pilus Protein T-cell Epitopes (Starting Sequence # given)

4(Asn-Ile-Thr-Val-Thr-Ala-Ser-Val-Asp-Pro) (SEQ ID NO: 8),
8(Thr-Ala-Ser-Val-Asp-Pro-Val-Ile-Asp-Leu) (SEQ ID NO: 9),
12(Asp-Pro-Val-Ile-Asp-Leu-Leu-Gln-Ala-Asp) (SEQ ID NO: 10),
15(Ile-Asp-Leu-Leu-Gln-Ala-Asp-Gly-Asn-Ala) (SEQ ID NO: 11),
20(Ala-Asp-Gly-Asn-Ala-Leu-Pro-Ser-Ala-Val) (SEQ ID NO: 12),
26(Pro-Ser-Ala-Val-Lys-Leu-Ala-Tyr-Ser-Pro) (SEQ ID NO: 13),
72(Leu-Asn-Ser-Thr-Val-Gln-Met-Pro-Ile-Ser) (SEQ ID NO: 14),
78(Met-Pro-Ile-Ser-Val-Ser-Trp-Gly-Gly-Gln) (SEQ ID NO: 15),
87(Gln-Val-Leu-Ser-Thr-Thr-Ala-Lys-Glu-Phe) (SEQ ID NO: 16),
126(Ala-Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr) (SEQ ID NO: 17) and
133(Gly-Asn-Tyr-Ser-Gly-Val-Val-Ser-Leu-Val) (SEQ ID NO: 18) and

mixtures thereof;

Synthetic Peptides Containing CFA/I Pilus Protein B-cell (antibody) Epitopes
(Starting Sequence # given)

3(Lys-~~Asn~~Asn-Ile-Thr-Val-Thr-Ala-Ser-Val) (SEQ ID NO: 19),
11(Val-Asp-Pro-Val-Ile~~Ile~~Ile-Asp-Leu-Leu-Gln-Ala-Asp) (SEQ ID NO: 20),
32(Ala-Tyr-Ser-Pro-Ala-Ser-Lys-Thr-Phe-Lys-Thr-Phe-
Glu-Ser-Tyr-Arg-Val) (SEQ ID NO: 21),
32(Ala-Tyr-Ser-Pro-Ala-Ser-Lys-Thr-Phe) (SEQ ID NO: 22),
38(Lys-Thr-Phe-Glu-Ser-Tyr-Arg-Val) (SEQ ID NO: 23),
66(Pro-Gln-Leu-Thr-Asp-Val-Leu-Asn-Ser) (SEQ ID NO: 24),
93(Ala-Lys-Glu-Phe-Glu-Ala-Ala-Ala) (SEQ ID NO: 25),
124(Lys-Thr-Ala-Gly-Thr-Ala-Pro-Thr) (SEQ ID NO: 26),

127(Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr-Ser) (SEQ ID NO: 27), and
124(Lys-Thr-Ala-Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr-
Ser) (SEQ ID NO: 28), and mixtures thereof; and
Synthetic Peptides Containing CFA/I Pilus Protein T-cell and B-cell (antibody) Epitopes
(Starting Sequence # given)

3(Lys-Asn-Ile-Thr-Val-Thr-Ala-Ser-BaVal-Asp-Pro) (SEQ ID NO: 29),
8(Thr-Ala-Ser-BaVal-Asp-Pro-BaVal-Ile-Asp-Leu-Leu-Gln-
Ala-Asp) (SEQ ID NO: 30),
11(BaVal-Asp-Pro-BaVal-Ile-Asp-Leu-Leu-Gln-Ala-Asp) (SEQ ID NO: 20),
20(Ala-Asp-Gly-Asn-Ala-Leu-Pro-Ser-Ala-Val) (SEQ ID NO: 12),
124(Lys-Thr-Ala-Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr-
Ser) (SEQ ID NO: 28), and
126(Ala-Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr-Ser) (SEQ ID NO: 31), and mixtures
thereof.

Please delete the paragraph on page 61, lines 10-22, and replace it with the
following paragraph:

69. The vaccine according to Item 67 wherein the antigenic synthetic peptide is selected from the
group consisting essentially of
4(Asn-Ile-Thr-Val-Thr-Ala-Ser-Val-Asp-Pro) (SEQ ID NO: 8),
8(Thr-Ala-Ser-Val-Asp-Pro-Val-Ile-Asp-Leu) (SEQ ID NO: 9),
12(Asp-Pro-Val-Ile-Asp-Leu-Leu-Gln-Ala-Asp) (SEQ ID NO: 10),
15(Ile-Asp-Leu-Leu-Gln-Ala-Asp-Gly-Asn-Ala) (SEQ ID NO: 11),
20(Ala-Asp-Gly-Asn-Ala-Leu-Pro-Ser-Ala-Val) (SEQ ID NO: 12),
26(Pro-Ser-Ala-Val-Lys-Leu-Ala-Tyr-Ser-Pro) (SEQ ID NO: 13),
72(Leu-Asn-Ser-Thr-Val-Gln-Met-Pro-Ile-Ser) (SEQ ID NO: 14),
78(Met-Pro-Ile-Ser-Val-Ser-Trp-Gly-Gly-Gln) (SEQ ID NO: 15),
87(Gln-Val-Leu-Ser-Thr-Thr-Ala-Lys-Glu-Phe) (SEQ ID NO: 16),
126(Ala-Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr) (SEQ ID NO: 17), and
133(Gly-Asn-Tyr-Ser-Gly-Val-Val-Ser-Leu-Val) (SEQ ID NO: 18), and mixtures thereof.

Please delete the paragraph on page 61, lines 23-24 , and replace it with the following paragraph:

70. The vaccine according to Item 69 wherein the antigenic synthetic peptide is 4(Asn-Ile-Thr-Val-Thr-Ala-Ser-Val-Asp-Pro) (SEQ ID NO: 8).

Please delete the paragraph on page 62, lines 1-2 , and replace it with the following paragraph:

71. The vaccine according to Item 69 wherein the antigenic synthetic peptide is 8(Thr-Ala-Ser-Val-Asp-Pro-Val-Ile-Asp-Leu) (SEQ ID NO: 9).

Please delete the paragraph on page 62, lines 3-4, and replace it with the following paragraph:

72. The vaccine according to Item 69 wherein the antigenic synthetic peptide is 12(Asp-Pro-Val-Ile-Asp-Leu-Leu-Gln-Ala-Asp) (SEQ ID NO: 10).

Please delete the paragraph on page 62, lines 5-6, and replace it with the following paragraph:

73. The vaccine according to Item 69 wherein the antigenic synthetic peptide is 15(Ile-Asp-Leu-Leu-Gln-Ala-Asp-Gly-Asn-Ala) (SEQ ID NO: 11).

Please delete the paragraph on page 62, lines 7-8, and replace it with the following paragraph:

74. The vaccine according to Item 69 wherein the antigenic synthetic peptide is 20(Ala-Asp-Gly-Asn-Ala-Leu-Pro-Ser-Ala-Val) (SEQ ID NO: 12).

Please delete the paragraph on page 62, lines 9-10, and replace it with the following paragraph:

75. The vaccine according to Item 69 wherein the antigenic synthetic peptide is 26(Pro-Ser-Ala-Val-Lys-Leu-Ala-Tyr-Ser-Pro) (SEQ ID NO: 13).

Please delete the paragraph on page 62, lines 11-12, and replace it with the following paragraph:

76. The vaccine according to Item 69 wherein the antigenic synthetic peptide is 72(Leu-Asn-Ser-Thr-Val-Gln-Met-Pro-Ile-Ser) (SEQ ID NO: 14).

Please delete the paragraph on page 62, lines 13-14, and replace it with the following paragraph:

77. The vaccine according to Item 69 wherein the antigenic synthetic peptide is 78(Met-Pro-Ile-Ser-Val-Ser-Trp-Gly-Gly-Gln) (SEQ ID NO: 15).

Please delete the paragraph on page 62, lines 15-16, and replace it with the following paragraph:

78. The vaccine according to Item 69 wherein the antigenic synthetic peptide is 87(Gln-Val-Leu-Ser-Thr-Thr-Ala-Lys-Glu-Phe) (SEQ ID NO: 16).

Please delete the paragraph on page 62, lines 17-18, and replace it with the following paragraph:

79. The vaccine according to Item 69 wherein the antigenic synthetic peptide is 126(Ala-Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr) (SEQ ID NO: 17).

Please delete the paragraph on page 63, lines 1-2, and replace it with the following paragraph:

80. The vaccine according to Item 69 wherein the antigenic synthetic peptide is 133(Gly-Asn-Tyr-Ser-Gly-Val-Val-Ser-Leu-Val) (SEQ ID NO: 18).

Please delete the paragraph on page 63, lines 3-17, and replace it with the following paragraph:

81. The vaccine according to Item 67 wherein the antigenic synthetic peptide is selected from the group consisting essentially of

3(Lys-~~Asn~~Asn-Ile-Thr-Val-Thr-Ala-Ser-Val) (SEQ ID NO: 19),

11(Val-Asp-Pro-Val-Ile-Asp-Leu-Leu-Gln-Ala-Asp) (SEQ ID NO: 20),

22(Gly-Asn-Ala-Leu-Pro-Ser-Ala-Val) (SEQ ID NO: 32),

32(Ala-Tyr-Ser-Pro-Ala-Ser-Lys-Thr-Phe-Lys-Thr-Phe-
Glu-Ser-Tyr-Arg-Val) (SEQ ID NO: 21),

32(Ala-Tyr-Ser-Pro-Ala-Ser-Lys-Thr-Phe) (SEQ ID NO: 22),
38(Lys-Thr-Phe-Glu-Ser-Tyr-Arg-Val) (SEQ ID NO: 23),
66(Pro-Gln-Leu-Thr-Asp-Val-Leu-Asn-Ser) (SEQ ID NO: 24),
93(Ala-Lys-Glu-Phe-Glu-Ala-Ala-Ala) (SEQ ID NO: 25),
124(Lys-Thr-Ala-Gly-Thr-Ala-Pro-Thr) (SEQ ID NO: 26),
127(Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr-Ser) (SEQ ID NO: 27), and
124(Lys-Thr-Ala-Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr-Ser) (SEQ ID NO: 28), and
mixtures thereof.

Please delete the paragraph on page 63, lines 18-19, and replace it with the following paragraph:

82. The vaccine according to Item 81 wherein the antigenic synthetic peptide is 3(Lys-~~Ala~~Asn-Ile-Thr-Val-Thr-Ala-Ser-Val) (SEQ ID NO: 19).

Please delete the paragraph on page 63, lines 20-21, and replace it with the following paragraph:

83. The vaccine according to Item 81 wherein the antigenic synthetic peptide is 11(Val-Asp-Pro-Val-Ile-Asp-Leu-Leu-Gln-Ala-Asp) (SEQ ID NO: 20).

Please delete the paragraph on page 63, lines 22-23, and replace it with the following paragraph:

84. The vaccine according to Item 81 wherein the antigenic synthetic peptide is 22(Gly-Asn-Ala-Leu-Pro-Ser-Ala-Val) (SEQ ID NO: 32).

Please delete the paragraph on page 63, lines 24-25, and replace it with the following paragraph:

85. The vaccine according to Item 81 wherein the antigenic synthetic peptide is 32(Ala-Tyr-Ser-Pro-Ala-Ser-Lys-Thr-Phe-Lys-Thr-Phe-Glu-Ser-Tyr-Arg-Val) (SEQ ID NO: 21).

Please delete the paragraph on page 64, lines 1-2, and replace it with the following paragraph:

86. The vaccine according to Item 81 wherein the antigenic synthetic peptide is 32(Ala-Tyr-Ser-Pro-Ala-Ser-Lys-Thr-Phe) (SEQ ID NO: 22).

Please delete the paragraph on page 64, lines 3-4, and replace it with the following paragraph:

87. The vaccine according to Item 81 wherein the antigenic synthetic peptide is 38(Lys-Thr-Phe-Glu-Ser-Tyr-Arg-Val) (SEQ ID NO: 23).

Please delete the paragraph on page 64, lines 5-6, and replace it with the following paragraph:

88. The vaccine according to Item 81 wherein the antigenic synthetic peptide is 66(Pro-Gln-Leu-Thr-Asp-Val-Leu-Asn-Ser) (SEQ ID NO: 24).

Please delete the paragraph on page 64, lines 7-8, and replace it with the following paragraph:

89. The vaccine according to Item 81 wherein the antigenic synthetic peptide is 93(Ala-Lys-Glu-Phe-Glu-Ala-Ala-Ala) (SEQ ID NO: 25).

Please delete the paragraph on page 64, lines 9-10 and replace it with the following paragraph:

90. The vaccine according to Item 81 wherein the antigenic synthetic peptide is 124(Lys-Thr-Ala-Gly-Thr-Ala-Pro-Thr) (SEQ ID NO: 26).

Please delete the paragraph on page 64, lines 11-12 and replace it with the following paragraph:

91. The vaccine according to Item 82 wherein the antigenic synthetic peptide is 127(Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr-Ser) (SEQ ID NO: 27).

Please delete the paragraph on page 64, lines 14-15 and replace it with the following paragraph:

92. The vaccine according to Item 82 wherein the antigenic synthetic peptide is 124(Lys-Thr-Ala-Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr-Ser) (SEQ ID NO: 28).

Please delete the paragraph on page 64, lines 16-23 and replace it with the following paragraph:

93. The vaccine according to Item 67 wherein the antigenic synthetic peptide is selected from the group consisting essentially of

3(Lys-Asn-Ile-Thr-Val-Thr-Ala-Ser-B~~V~~Val-Asp-Pro) (SEQ ID NO: 29),

8(Thr-Ala-Ser-B~~V~~Val-Asp-Pro-B~~V~~Val-Ile-Asp-Leu-Leu-Gln-Ala-Asp) (SEQ ID NO: 30),

11(B~~V~~Val-Asp-Pro-B~~V~~Val-Ile-Asp-Leu-Leu-Gln-Ala-Asp) (SEQ ID NO: 20),

20(Ala-Asp-Gly-Asn-Ala-Leu-Pro-Ser-Ala-Val) (SEQ ID NO: 12),

124(Lys-Thr-Ala-Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr-Ser) (SEQ ID NO: 28),

126(Ala-Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr-Ser) (SEQ ID NO: 31), and mixtures thereof.

Please delete the paragraph on page 64, lines 24-25, and replace it with the following paragraph:

94. The vaccine according to Item 93 wherein the antigenic synthetic peptide is

3(Lys-Asn-Ile-Thr-Val-Thr-Ala-Ser-B~~V~~Val-Asp-Pro) (SEQ ID NO: 29).

Please delete the paragraph on page 64, lines 26-27, and replace it with the following paragraph:

95. The vaccine according to Item 93 wherein the antigenic synthetic peptide

is 8(Thr-Ala-Ser-B~~V~~Val-Asp-Pro-B~~V~~Val-Ile-Asp-Leu-Leu-Gln-Ala-Asp) (SEQ ID NO: 30).

Please delete the paragraph on page 65, lines 1-2, and replace it with the following paragraph:

96. The vaccine according to Item 93 wherein the antigenic synthetic peptide is 11(~~B~~Val-Asp-Pro-~~B~~Val-Ile-Asp-Leu-Leu-Gln-Ala-Asp) (SEQ ID NO: 20).

Please delete the paragraph on page 65, lines 3-4, and replace it with the following paragraph:

97. The vaccine according to Item 93 wherein the antigenic synthetic peptide is 20(Ala-Asp-Gly-Asn-Ala-Leu-Pro-Ser-Ala-Val) (SEQ ID NO: 12).

Please delete the paragraph on page 65, lines 5-6, and replace it with the following paragraph:

98. The vaccine according to Item 93 wherein the antigenic synthetic peptide is 124(Lys-Thr-Ala-Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr-Ser) (SEQ ID NO: 28).

Please delete the paragraph on page 65, lines 7-8, and replace it with the following paragraph:

99. The vaccine according to Item 93 wherein the antigenic synthetic peptide is 126(Ala-Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr-Ser) (SEQ ID NO: 31).

Please delete the paragraph on page 68, lines 13-17, and replace it with the following paragraph:

117. An immunostimulating composition according to Item 113 wherein the immunogenic substance is the synthetic peptide representing the peptide fragment beginning with the amino acid residue 63 through 78 of Pilus Protein CS3, said residue having the amino acid sequence, 63(Ser-Lys-Asn-Gly-Thr-Val-Thr-~~Tyr~~**Tyr**-Ala-His-Glu-Thr-Asn-Asn-Ser-Ala) (SEQ ID NO: 33).

Please delete the paragraph on page 70, lines 18-22, and replace it with the following paragraph:

133. A method according to Item 114 wherein the immunogenic substance is the synthetic peptide representing the peptide fragment beginning with the amino acid residue 63 through 78 of Pilus Protein CS3 said residue having the amino acid sequence 63(Ser-Lys-Asn-Gly-Thr-Val-Thr-~~Tyr~~**Tyr**-Ala-His-Glu-Thr-Asn-Asn-Ser-Ala) (SEQ ID NO: 33).

Please delete the paragraph on page 148, line 13, through page 150, line 12, and replace it with the following paragraph:

In addition to the above, the encapsulation of the following synthetic peptides are contemplated and considered to be well within the scope of this invention:

- (1) AF/R1 40-55;
- (2) AF/R1 79-94;
- (3) AF/R1 108-123;
- (4) AF/R1 1-13;
- (5) AF/R1 pepscan 16AA;
- (6) CFA/I 1-13; and
- (7) CFA/I pepscan 16AA.
- (8) Synthetic Peptides Containing CFA/I Pilus Protein
T-cell Epitopes (Starting Sequence # given)

4(Asn-Ile-Thr-Val-Thr-Ala-Ser-Val-Asp-Pro) (SEQ ID NO: 8),
8(Thr-Ala-Ser-Val-Asp-Pro-Val-Ile-Asp-Leu) (SEQ ID NO: 9),
12(Asp-Pro-Val-Ile-Asp-Leu-Leu-Gln-Ala-Asp) (SEQ ID NO: 10),
15(Ile-Asp-Leu-Leu-Gln-Ala-Asp-Gly-Asn-Ala) (SEQ ID NO: 11),
20(Ala-Asp-Gly-Asn-Ala-Leu-Pro-Ser-Ala-Val) (SEQ ID NO: 12),
26(Pro-Ser-Ala-Val-Lys-Leu-Ala-Tyr-Ser-Pro) (SEQ ID NO: 13),
72(Leu-Asn-Ser-Thr-Val-Gln-Met-Pro-Ile-Ser) (SEQ ID NO: 14),
78(Met-Pro-Ile-Ser-Val-Ser-Trp-Gly-Gly-Gln) (SEQ ID NO: 15),
87(Gln-Val-Leu-Ser-Thr-Thr-Ala-Lys-Glu-Phe) (SEQ ID NO: 16),
126(Ala-Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr) (SEQ ID NO: 17), and
133(Gly-Asn-Tyr-Ser-Gly-Val-Val-Ser-Leu-Val) (SEQ ID NO: 18), and mixtures thereof.

(9) Synthetic Peptides Containing CFA/I Pilus Protein B-cell (antibody)
Eptiopes (Starting Sequence # given)

3(Lys-~~Asn~~Asn-Ile-Thr-Val-Thr-Ala-Ser-Val) (SEQ ID NO: 19),
11(Val-Asp-Pro-Val-Ile-Asp-Leu-Leu-Gln-Ala-Asp) (SEQ ID NO: 20),
22(Gly-Asn-Ala-Leu-Pro-Ser-Ala-Val) (SEQ ID NO: 32),
32(Ala-Tyr-Ser-Pro-Ala-Ser-Lys-Thr-Phe-Lys-Thr-Phe-
Glu-Ser-Tyr-Arg-Val) (SEQ ID NO: 21),
32(Ala-Tyr-Ser-Pro-Ala-Ser-Lys-Thr-Phe) (SEQ ID NO: 22),
38(Lys-Thr-Phe-Glu-Ser-Tyr-Arg-Val) (SEQ ID NO: 23),
66(Pro-Gln-Leu-Thr-Asp-Val-Leu-Asn-Ser) (SEQ ID NO: 24),
93(Ala-Lys-Glu-Phe-Glu-Ala-Ala-Ala) (SEQ ID NO: 25),
124(Lys-Thr-Ala-Gly-Thr-Ala-Pro-Thr) (SEQ ID NO: 26),
127(Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr-Ser) (SEQ ID NO: 27), and
124(Lys-Thr-Ala-Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr-Ser) (SEQ ID NO: 28), and
mixtures thereof.

(10) synthetic peptides containing CFA/I pilus protein T-cell and
B-cell (antibody) epitopes (Starting Sequence # given)

3(Lys-Asn-Ile-Thr-Val-Thr-Ala-Ser-~~B~~Val-Asp-Pro) (SEQ ID NO: 29),
8(Thr-Ala-Ser-~~B~~Val-Asp-Pro-~~B~~Val-Ile-Asp-Leu-Leu-Gln-Ala-Asp) (SEQ ID NO: 30),
11(~~B~~Val-Asp-Pro-~~B~~Val-Ile-Asp-Leu-Leu-Gln-Ala-Asp) (SEQ ID NO: 20),

20(Ala-Asp-Gly-Asn-Ala-Leu-Pro-Ser-Ala-Val) (SEQ ID NO: 12),
124(Lys-Thr-Ala-Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr-Ser) (SEQ ID NO: 28),
126(Ala-Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr-Ser) (SEQ ID NO: 31), and mixtures
thereof.

Please delete the paragraph on page 150, line 13, through page 151, line 7, and
replace it with the following paragraph:

(11) synthetic peptides containing CFA/I pilus protein T-cell and B-cell (antibody) epitopes
(Starting Sequence # given)

CFA/I pilus protein T-cell epitopes

4(Asn-Ile-Thr-Val-Thr-Ala-Ser-Val-Asp-Pro) (SEQ ID NO: 8),
8(Thr-Ala-Ser-Val-Asp-Pro-Val-Ile-Asp-Leu) (SEQ ID NO: 9),
12(Asp-Pro-Val-Ile-Asp-Leu-Leu-Gln-Ala-Asp) (SEQ ID NO: 10),
15(Ile-Asp-Leu-Leu-Gln-Ala-Asp-Gly-Asn-Ala) (SEQ ID NO: 11),
20(Ala-Asp-Gly-Asn-Ala-Leu-Pro-Ser-Ala-Val) (SEQ ID NO: 12),
26(Pro-Ser-Ala-Val-Lys-Leu-Ala-Tyr-Ser-Pro) (SEQ ID NO: 13),
72(Leu-Asn-Ser-Thr-Val-Gln-Met-Pro-Ile-Ser) (SEQ ID NO: 14),
78(Met-Pro-Ile-Ser-Val-Ser-Trp-Gly-Gly-Gln) (SEQ ID NO: 15),
87(Gln-Val-Leu-Ser-Thr-Thr-Ala-Lys-Glu-Phe) (SEQ ID NO: 16),
126(Ala-Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr) (SEQ ID NO: 17), and
133(Gly-Asn-Tyr-Ser-Gly-Val-Val-Ser-Leu-Val) (SEQ ID NO: 18); and synthetic peptides
containing CFA/I pilus protein B-cell (antibody) epitopes (Starting Sequence # given)

Please delete the paragraph on page 151, lines 8-21, and replace it with the following paragraph:

CFA/I pilus protein B-cell epitopes

3(Lys-~~Ana~~Asn-Ile-Thr-Val-Thr-Ala-Ser-Val) (SEQ ID NO: 19),
11(Val-Asp-Pro-Val-Ile-Asp-Leu-Leu-Gln-Ala-Asp) (SEQ ID NO: 20),
22(Gly-Asn-Ala-Leu-Pro-Ser-Ala-Val) (SEQ ID NO: 32),
32(Ala-Tyr-Ser-Pro-Ala-Ser-Lys-Thr-Phe-Lys-Thr-Phe-
Glu-Ser-Tyr-Arg-Val) (SEQ ID NO: 21),
32(Ala-Tyr-Ser-Pro-Ala-Ser-Lys-Thr-Phe) (SEQ ID NO: 22),
38(Lys-Thr-Phe-Glu-Ser-Tyr-Arg-Val) (SEQ ID NO: 23),
66(Pro-Gln-Leu-Thr-Asp-Val-Leu-Asn-Ser) (SEQ ID NO: 24),
93(Ala-Lys-Glu-Phe-Glu-Ala-Ala-Ala) (SEQ ID NO: 25),
124(Lys-Thr-Ala-Gly-Thr-Ala-Pro-Thr) (SEQ ID NO: 26),
127(Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr-Ser) (SEQ ID NO: 27), and
124(Lys-Thr-Ala-Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr-Ser) (SEQ ID NO: 28), and
mixtures thereof.

Please delete the paragraph on page 152, line 1, through page 153, line 5, and replace it with the following paragraph:

(12) synthetic peptides containing CFA/I pilus protein T-cell and B-cell (antibody) epitopes
(Starting Sequence # given)

CFA/I pilus protein T-cell epitopes

3(Lys-~~Ana~~Asn-Ile-Thr-Val-Thr-Ala-Ser-Val) (SEQ ID NO: 19),
11(Val-Asp-Pro-Val-Ile-Asp-Leu-Leu-Gln-Ala-Asp) (SEQ ID NO: 20),
22(Gly-Asn-Ala-Leu-Pro-Ser-Ala-Val) (SEQ ID NO: 32),
32(Ala-Tyr-Ser-Pro-Ala-Ser-Lys-Thr-Phe-Lys-Thr-Phe-
Glu-Ser-Tyr-Arg-Val) (SEQ ID NO: 21),
32(Ala-Tyr-Ser-Pro-Ala-Ser-Lys-Thr-Phe) (SEQ ID NO: 22),
38(Lys-Thr-Phe-Glu-Ser-Tyr-Arg-Val) (SEQ ID NO: 23),

66(Pro-Gln-Leu-Thr-Asp-Val-Leu-Asn-Ser) (SEQ ID NO: 24),
93(Ala-Lys-Glu-Phe-Glu-Ala-Ala-Ala) (SEQ ID NO: 25),
124(Lys-Thr-Ala-Gly-Thr-Ala-Pro-Thr) (SEQ ID NO: 26),
127(Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr-Ser) (SEQ ID NO: 27), and
124(Lys-Thr-Ala-Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr-Ser) (SEQ ID NO: 28), and
synthetic peptides containing CFA/I pilus protein T-cell and B-cell (antibody) epitopes (Starting
Sequence # given)

CFA/I pilus protein B-cell epitopes

3(Lys-Asn-Ile-Thr-Val-Thr-Ala-Ser-B~~V~~al-Asp-Pro) (SEQ ID NO: 29),
8(Thr-Ala-Ser-B~~V~~al-Asp-Pro-B~~V~~al-Ile-Asp-Leu-Leu-Gln-Ala-Asp) (SEQ ID NO: 30),
11(B~~V~~al-Asp-Pro-B~~V~~al-Ile-Asp-Leu-Leu-Gln-Ala-Asp) (SEQ ID NO: 20),
20(Ala-Asp-Gly-Asn-Ala-Leu-Pro-Ser-Ala-Val) (SEQ ID NO: 12),
124(Lys-Thr-Ala-Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr-Ser) (SEQ ID NO: 28),
126(Ala-Gly-Thr-Ala-Pro-Thr-Ala-Gly-Asn-Tyr-Ser) (SEQ ID NO: 31), and mixtures
thereof.

Please delete the paragraph on page 154, line 13, through page 155, line 11,
and replace it with the following paragraph:

Synthetic peptides (16 amino acids each) were selected by theoretical criteria from the amino acid sequence of AF/R1 as deduced from the nucLeutide sequence. Three sets of software were used for the selections. Software designed to predict B cell epitopes based on hydrophilicity, flexibility, and other criteria was developed by the University of Wisconsin Genetics Computer Group. Software designed to predict T cell epitopes was based on the Rothbard method was written by Stephen Van Albert (The Walter Reed Army Institute of Research, Washington, D.C.). Software designed to predict T cell epitopes based on the Berzofsky method is published as the AMPHI program. The selected peptides were synthesized by using conventional Merrifield solid phase technology. AF/RI 40-55 (Thr-Asn-Ala-~~Cly~~Gly-Thr-Asp-Ile-Gly-Ala-Asn-Lys-Ser-Phe-Thr-Leu-Lys) (SEQ ID NO: 34) was various dilutions of antigen and were incubated at 37 °C in 5% CO₂. In other experiments, cultures were conducted in a 24-well plates. In these experiments, 5 x 10⁶ cells were cultured with or without antigen in a 2 ml volume. After 4 days, 100 microliters aliquots of

cells were transferred to 96-well plates for pulsing and harvesting. Previous experiments have demonstrated that optimal concentrations of antigen range from 150 ng/ml to 15 micrograms/ml in the 96-well plate assay and 1.5 ng/ml to 150 ng/ml in the 24-well plate assay. These were the concentrations employed in the current study. All cultures were pulsed with 1 Ci [³H]thymidine (25 Ci/mmol, Amersham, Arlington Heights, IL) on day 4 of culture and were harvested for scintillation counting 6 hours later.

Please delete the Table on page 162, line 18, through page 163, line 9, and replace it with the following Table:

TABLE 10 Linear B-Cell Epitopes of CFA/I in Monkeys

Sequence	Individuals		
Position	Responding	Consensus Site	
1. 11-21	3	VDPVIDLLQ	<u>(SEQ ID NO: 35)</u>
2. 93-101	2	AKEFEAAA	<u>(SEQ ID NO: 25)</u>
3. 124-136	2	GPAPT	<u>(SEQ ID NO: 36)</u>
4. 66-74	2	PQLTDVLN	<u>(SEQ ID NO: 37)</u>
5. 22-29	2	GNALPSAV	<u>(SEQ ID NO: 32)</u>
6. 32-40	1	KTF*	
7. 38-45	1		
8. 3-11	1		

*Overlap between epitope 6 and 7

Please delete the Table on page 164, line 23, through page 165, line 13, and replace it with the following Table:

TABLE 11

Amino acid sequence of immunodominant T cell epitopes*

Residue	
Numbers	Amino Acids
8-17	Thr Ala Ser Val Asp Pro Val Ile Asp Leu <u>(SEQ ID NO: 9)</u>
40-49	Phe Glu Ser Tyr Arg Val Met Thr Gln Val <u>(SEQ ID NO: 38)</u>
72-81	Leu Asn Ser Thr Val Gln Met Pro Ile Ser <u>(SEQ ID NO: 14)</u>
134-143	Asn Tyr Ser Gly Val Val Ser Leu Val Met <u>(SEQ ID NO: 39)</u>

*Of the 19 decapeptides that supported a significant proliferative response and contained a serine at either position 2, 3, or 4, nine has a serine specifically at position 3. Some of the most robust responses were to the peptides that contained a serine residue at the third position. The amino acid sequence of four such decapeptides which are believed to be immunodominant T cell epitopes is shown.

Please delete the paragraph on page 223, line 22, through page 224, line 7, and replace it with the following paragraph:

12. The microcapsules of items 7 or 8 or 9 or 10 or 11 having analogs of histatin with chain lengths of from 11-24 amino acids of molecular weights from 1,500-3,000 daltons and characterized by the following structures:

1. DSHAKRHHGYKRKFHEKHHSHRGY (SEQ ID NO: 1)
2. KRHHGYKRKFHEKHHSHRGYR (SEQ ID NO: 2)
3. KRHHGYKRKFHEKHHSHR (SEQ ID NO: 3)
4. RKFHEKHHSHRGYR (SEQ ID NO: 4)
5. AKRHHGYKRKFH (SEQ ID NO: 5)
6. *AKRHHGYKRKFH
7. KRHHGYKRKF (SEQ ID NO: 6)

*D-amino acid

Please delete the paragraph on page 224, lines 8-13, and replace it with the following paragraph:

13. The microcapsules of items 1 or 2 or 3 or 4 or 5 wherein the biologically active agent is a polypeptide Leutinizing hormone releasing hormone (LHRH) that is a decapeptide of molecular weight 1182 in its acetate form, and having the structure:

p- E H W S Y G L R P G (SEQ ID NO: 7)